MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

TTP3121 – TCP/IP PROGRAMMING

(All sections / Groups)

25 OCTOBER 2019
3.00 p.m. – 5.00 p.m.
(2 hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 3 pages including cover page with 5 Questions only.

2. Attempt **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.

3. Please print all your answers in the Answer Booklet provided.

QUESTION 1

(a) Describe **TWO(2)** differences between OSI Layers and TCP/IP Layers.

[4 marks]

(b) With aid of diagram, explain **TWO(2)** types of client-server architectures.

[2 marks]

(c) Write a command to perform the following task in Linux Shell:

a. To list the content of a directory in a long list format.
b. To create a directory.
c. To show the first 5 lines of a file named *abc.txt*.
d. To show all the content of a file named *abc.txt*.

[4 x 1 mark = 4 marks]

QUESTION 2

(a) Explain *fork()* system call. [3 marks]

(b) List the output for the program below: [3 marks]

```
main()
{
        int childpid;

        childpid=fork();

        if (childpid != 0)
        {
                printf("\nFIST");
                sleep (5);
                printf("\nFET");
                exit(0);
          }
          else
          {
                sleep(1);
                printf("\nFOB");
                exit(0);
          }
}
```

Continued ...

(c) Identify the meaning of the code below: [2 marks]

```
sigset_t set1;
.
.
sigfillset(&set1);
sigprocmask ( SIG_SETMASK, &set1, NULL);
```

(d) Define the main function of *gethostname()* system call. [2 marks]

QUESTION 3

(a) Explain the functions of *getsockname()* and *getpeername()*? [2 marks]

(b) Provide a diagram to illustrate the connection process of a typical TCP socket. [3 marks]

(c) Differentiate between little-endian byte order with big-endian byte order. [2 marks]

(d) What is the function of *gethostbyname()*? List the input and output of the function. [3 marks]

QUESTION 4

(a) Explain **FOUR(4)** reasons of inter-process communication. [4 marks]

(b) Explain **TWO(2)** differences between pipes and FIFO in inter-process communication. [4 marks]

(c) List **TWO(2)** ways in which messages can be obtained from the queue in message queue system. [2 marks]

QUESTION 5

(a) With the aid of diagram, explain the Blocking I/O model. [4 marks]

(b) Describe the function of *select()* system call in I/O multiplexing. [2 marks]

(c) Explain **FOUR(4)** benefits of Remote Procedure Call (RPC). [4 marks]

End of Paper.